

The MAN *of the* HOUR *is the* SHIPBUILDER



RALPH
TREIDLER

American MECHANIC
Our Country Calls **YOU**

FAMILIAR TRADES

AND HOW THE SHIPYARDS USE THEM

On This List the Important Shipyard Occupations Are So Grouped as to Show the Trade to Which They Are Most Closely Related

Acetylene and Electrical Welders

Asbestos Workers

Blacksmiths

Anglesmiths
Dropforge Men
Flange Turners
Furnace Men

Boilermakers

Manglers
Pressers
Plate Straighteners
Reamers
Riveters: Heaters, Passers, Holders On,
and Coke Handlers
Tank Testers

Carpenters

Dock Builders
Fasteners
Joiners
Sparmakers
Stagemakers
Wood Caulkers
Wood Reamers

Chippers and Caulkers

Clerical

Counters
Estimators
Rate Setters
Storekeepers
Timekeepers
Weighers

Draftsmen

Marine Draftsmen
Tracers

Electrical Workers

Bell Hangers
Electricians
Welders and Molders
Wiremen

Foundry Workers

Chippers and Rattlers
Coremakers
Furnace Hands
Molders
Pattern Makers

Laborers

General
Material—Stock

Loftsmen

Developers
Loftsmen
Template Makers

Machinists and Machine Hands

Bladers
Cold Sawyers
Drillers, Hand and Machine
Helpers
Inside: Lathes; Drills; Boring, Milling and
Cutting Machines; Operators and Bench
Hands; Planes; Punches
Jogglers
Outside: Installers
Tool Grinders
Tool Makers

Painters and Wood Finishers

Plumbers and Pipefitters

Pipe Benders
Pipe Cutters
Pipe Machine Hands

Sheet Metal Workers and Coppersmiths

Shipfitters

Improvers
Linermen

Structural Iron Workers

Bolters Up
Erectors
Regulators
Riggers
Riveters

Miscellaneous Trades

Cementers
Conductors
Crane Operators
Engineers
Firemen
Galvanizers
Gantry Crane Men
Quartermen
Tile Layers
Trackmen
Upholsterers

Brief descriptions of most of these trades as plied in a shipyard are given on the following pages. The pictures show different steps in the construction of a ship

Draftsmen

While most of the drafting for ships is already done, there is need for some additional men in this field. For good draftsmen with mechanical ability there is a big opportunity to become Mold Loftsmen, Shipfitters, etc.

Loftsmen

Loftsmen and Developers (or Linesmen) are technical names for men who lay out from blue prints the lines of the ship on the floor of the mold loft. From these lines, patterns and molds or templates are prepared by the Developer. Skill in these trades can be acquired most easily by Template Makers, Sheet Metal Workers, Carpenters and Pattern Makers, who have ability to read drawings, measure accurately, visualize and see ahead.

Carpenters (Shipwrights) and Joiners

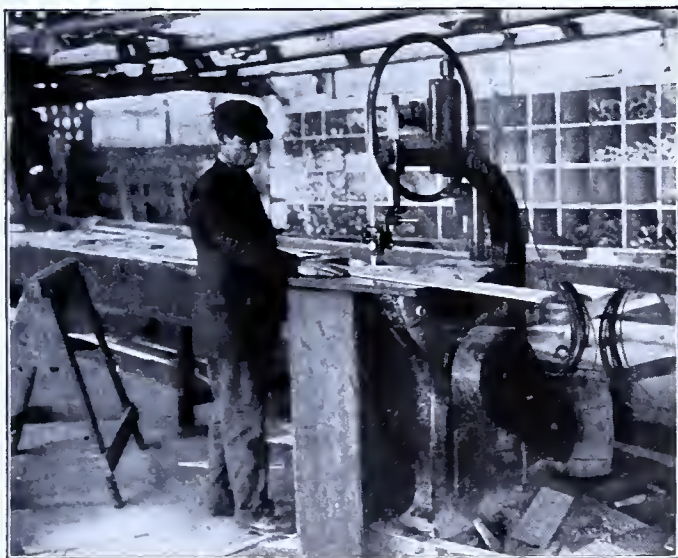
The worker on wood plays a large part in building steel ships. The vessel is assembled on the wooden ways from which, later, it is launched. Exterior and interior scaffoldings and stages rise as the sides of the boat are erected. In the ship itself there is wood-



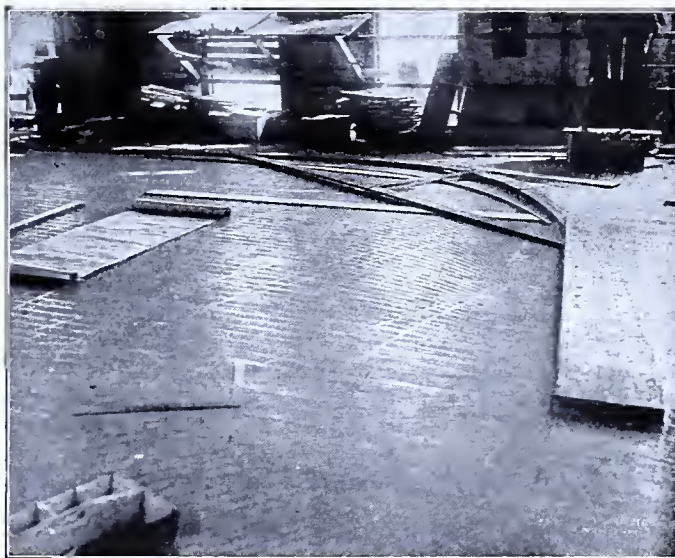
THE MOLD LOFT, WHERE THE TEMPLATES ARE MADE

work to be done of many kinds; installing derricks, arms and spars, planking and bolting wooden decks and calking them. In shipbuilding, the trades of the Carpenter and the Joiner are radically different. For the Joiner there is interior woodwork to construct, such as lockers, transoms, cabinets, stairs and wooden furniture of special shapes. The Carpenter or Joiner who has adaptability and can do his work well will be welcome and is needed in the shipyard.

The modern Shipwright is not, properly speaking, a Carpenter. The Shipwright "fairs" or trues up the steel ship.



BAND SAWING TEMPLATE PARTS IN THE MOLD LOFT



THE COMPLETED TEMPLATE IN THE MOLD LOFT



THE LINES ON THE MOLD LOFT FLOOR

Blacksmiths

Every section of a ship has a curve all its own. Many ideas of the designer must be turned into reality by the blows of the Blacksmith's hammer. Workers at the forge with hand or steam power, and experienced in both light and heavy general blacksmithing, make first-class blacksmiths for the shipyard. The vessel needs the art of the Anglesmith, the Dropforgeman, the Flangeturner. Ability to read blueprints permits the worker to set a higher value upon his services.

Shipfitters

Here is an opportunity for the bright American workman! The Shipfitter is one of the most important men

in the shipyard. Experienced men are so very scarce, and the need for more Shipfitters so great, that men from other trades will probably have to be taught this one. They will find it well worth while. It is a highly skilled trade, but one that can and will be learned by the men who don't lie asleep when opportunity knocks at the door. Those who can most easily acquire it are skilled Sheet Metal Workers, Structural Steel Layer-outs, Template Makers, Boilermakers, Machinists, Carpenters, Country Wheelwrights, or well-trained Auto-Repairmen. The Shipfitter not only makes templates for plates and shapes and marks off shapes from patterns, but must have the eye to fit all metal parts in the hull of the ship and take charge of assembling and erecting them.

Foundry Workers

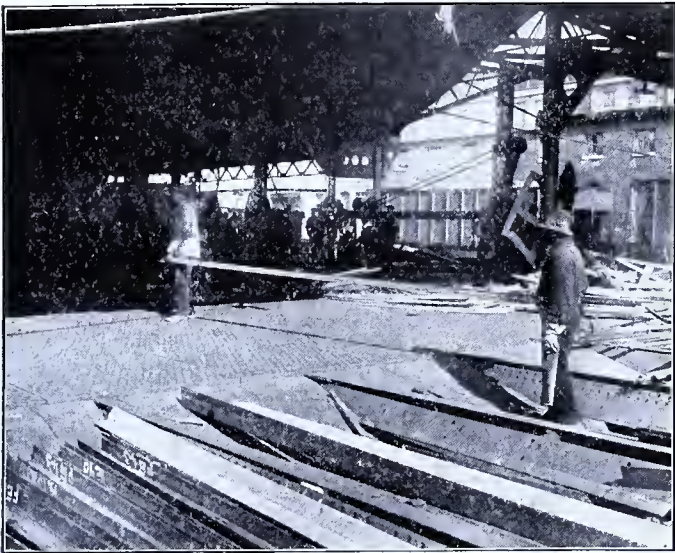
The ship foundry differs from the ordinary foundry only in two respects: much of the work is done in brass, and many of the castings are of great size. However, the Pattern Maker's job is just what he is used to. The Molder soon learns to prepare the sand for castings on a much larger scale, and he takes pride in his new achievement. So do the Coremakers, who find that building the large cores requires a larger degree of skill but is essentially the same art that they have practiced.



DRAWING THE LINE ON THE "SLAB" IN THE FURNACE SHED



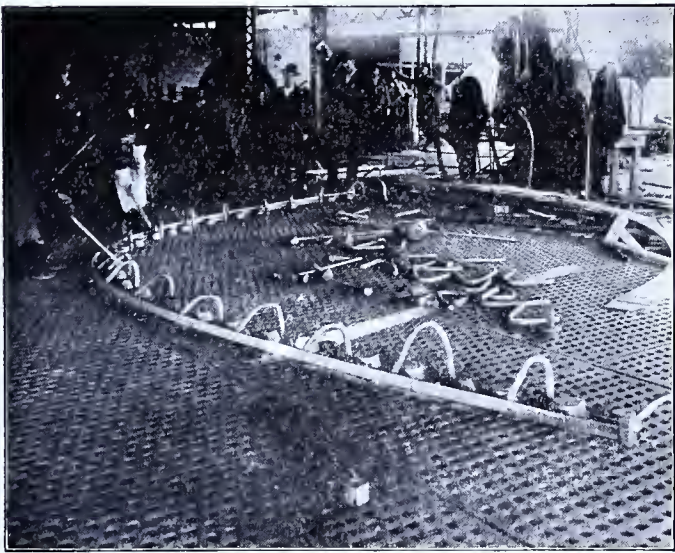
THE LINE ON THE "SLAB" FOR BENDING THE SHAPE



THE SHAPE BEFORE BEING BENT IN THE FURNACE SHED



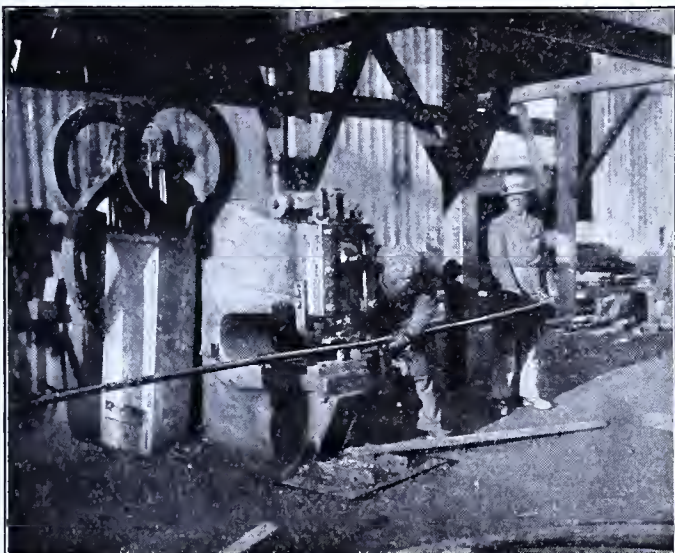
DRAWING THE HEATED SHAPE FROM THE FURNACE



BENDING THE FRAME ON THE "SLAB"



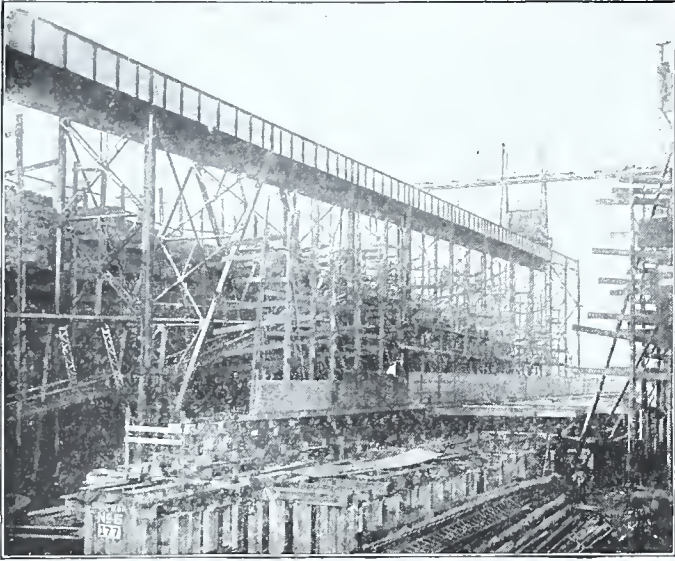
THE BENT SHAPE



PUNCHING THE FRAME



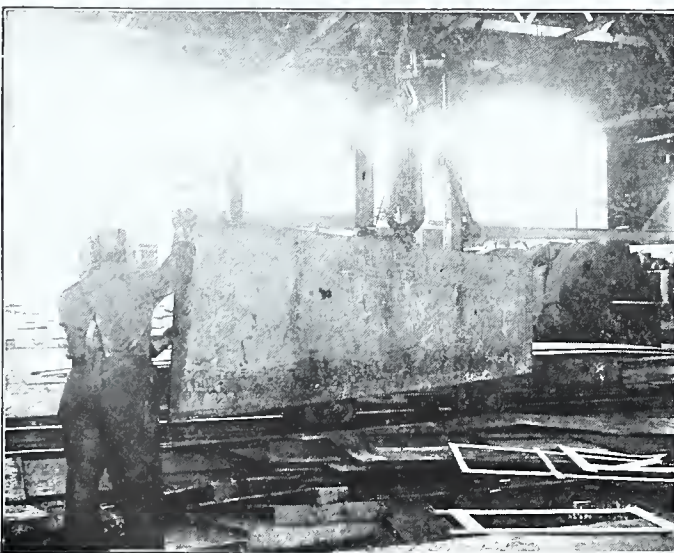
RIVETING THE FRAME



THE KEEL LAID

Structural Iron Workers

While skyscrapers are not necessary to win the war, the same Structural Iron Workers who have helped to erect the American city and span our rivers with great steel bridges can turn their skill to the building of America's mighty fleet of new steel ships. In the shipyard, familiar plates and shapes await their hand. The Regulator, the Rigger, the Erector, and their Helpers need little if any additional training to be able to swing the framework of a ship into place. It has already been proved that the Riveter who builds bridges can easily learn to make a water-tight rivet.



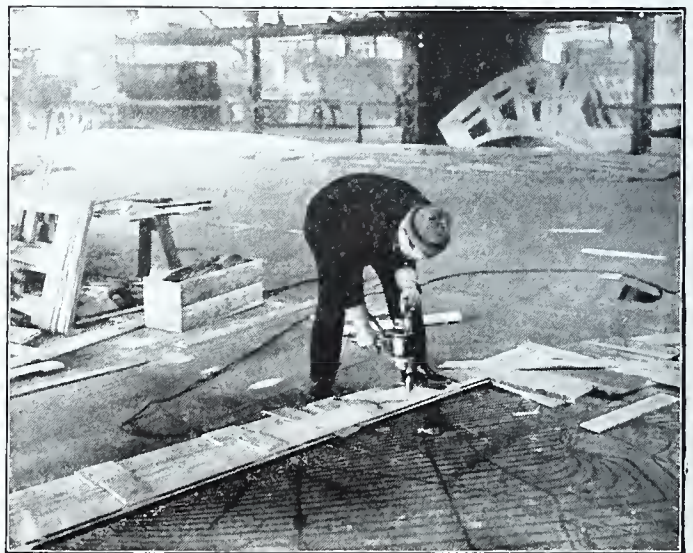
THE RAW PLATE

Plumbers and Pipefitters

It is considerably harder to install plumbing and fit pipes in a ship than in a modern building; but, after all, the task is much the same. A Marine Plumber must do more joint-wiping, must understand working of sheet lead and how to bend large sizes of lead pipe. A Pipefitter working on ships makes much use of special sizes of pipes and tubing, does a great deal of pipe bending and makes many flange joints. Both Plumber and Pipefitter will find the work similar to what they are used to and good men will quickly make themselves useful.

Boilermakers

From the big boilers in the hold up to the top ring of the smokestack, the Boilermaker contributes his strength and skill to the ship. Some plates must be straightened by hand or machine; others pressed into needed form. Reamers and Countersinkers prepare the way for the Riveters, Chippers and Caulkers. In all branches of the trade, the work of the Boilermaker in the shipyard differs not a whit from his work elsewhere.



DRILLING HOLES IN THE TEMPLATE

Machinists

A modern ship is vital with machinery. With its engines, pumps, winches and hoists, its equipment presents a fascinating task to Machinists of many types. Any man who is skilled in machining metal can find a place to use his abilities in building a ship. Drills, planes, slotters, shapers, boring and milling machines and lathes; these and many like them are the familiar machines of industry and are much used in the great ship fabricating plants. Both Inside and Outside Machinists are needed in large numbers for tasks requiring all degrees of skill, from that of the expert Toolmaker down to the Joggler and Helper.

Sheet Metal Workers and Coppersmiths

One of the trades which as utilized in a shipyard is much the same as elsewhere is that of the Sheet Metal Worker, including the Coppersmith. All work in a shipyard on light iron or steel, weighing less than five pounds per square foot, is performed by the Sheet Metal Worker. Tanks of iron or copper, wire mesh work, all sorts of oil and water-tight containers have to be made. Skilled workers should be able to read blue prints. (See Shipfitters.)



THE MACHINE SHOP

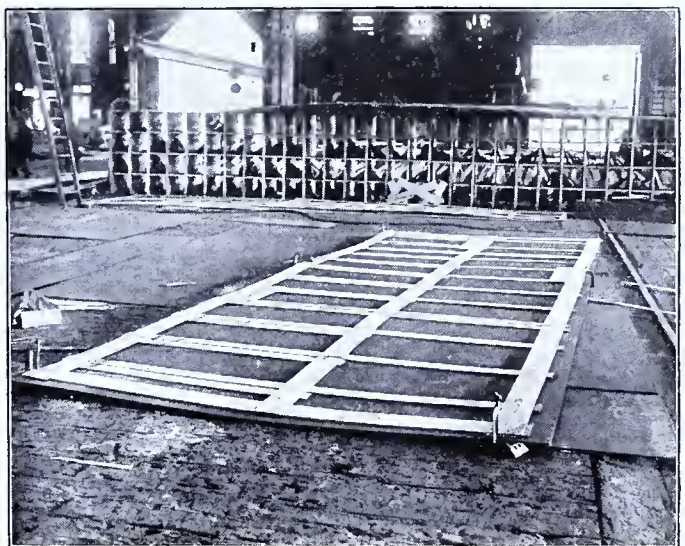
Acetylene and Electrical Welders

Masters of the new art of welding and cutting metals with the oxy-acetylene torch find great need for their skill in a shipyard at their accustomed tasks. The graceful lines of a ship require pipes, frames and fittings of unusual shapes, calling forth all the powers of the gas flame in working steel and cast iron, in cutting holes too large to punch and in shearing through plates, "I" beams and channels.

Difficult work—building up metal on shafts and other parts with electric arc welding machines—is done by the Electrical Welder, who must be an experienced electrician. For him a big future is forecast by far-thinking builders when they say that some day the plates of ships may all be electrically welded.



MAKING TEMPLATES IN THE MOLD LOFT



A PLATE WITH THE TEMPLATE APPLIED FOR
"LAYING OFF"



PRICK PUNCHING THE PLATE THROUGH TEMPLATE



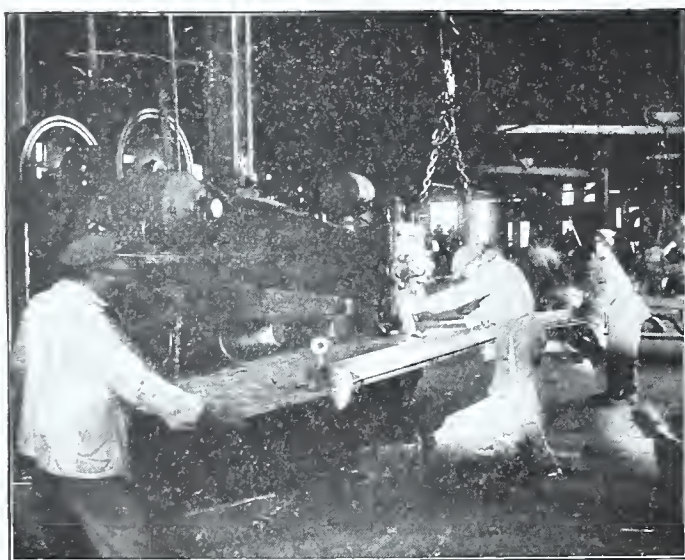
MAKING THE PRICK PUNCH HOLES LARGER FOR THE PUNCH

Electrical Workers

Light and power and heat for welding are contributions of electricity to ships and shipyards. The nerves of the ship are supplied by the Electrician in the form of voice tubes, engine telegraphs, and other electrical apparatus which transmit the commands of the captain; and any failure on their part to function correctly would make the ship under way like a man without a mind. Men who are expert at assembling and installing electrical appliances, repairing motors and equipment, stringing wires and cables, and at conduit work, are invaluable in the yards where ships are built.

Asbestos Workers

The far-sent vessel may cross from winter into summer and back again during a single voyage. Much heat and frost insulation is required. Steam pipes and boilers must be covered with asbestos. A man who can do this work on a building can do it on a ship.



PUNCHING THE PLATE WITH THE PUNCHING MACHINE



BOLTING THE SHELL PLATE ON TO THE RIBS OR FRAMES

Painters and Wood Finishers

Here is the chance for good house and metal painters! A ship presents no different problem from a building. From hull and deck painting, requiring little experience, all degrees of skill are needed up to that necessary for sign work, spar varnishing and interior decorating. Wood Finishers apply varnish and shellac in ways with which they are entirely familiar.

Chippers and Caulkers

The air hammer in the shipyard will clatter as ceaselessly as the machine gun in France until America wins the war. With it, Chippers cut and trim plates and bars, chip and trim large castings like the stem and stern posts, and cut out bad rivets. Every part of a ship must fit snug and tight. The skillful Chipper is advanced to Caulker who, armed also with the restless air hammer, serves the country by making watertight the ship that is to keep our soldiers supplied. Here is the opening into which quarrymen, foundry chippers and others accustomed to handling pneumatic hand tools, fit easily when they come to the shipyard.



REAMING RIVET HOLES OF THE DECKPLATES



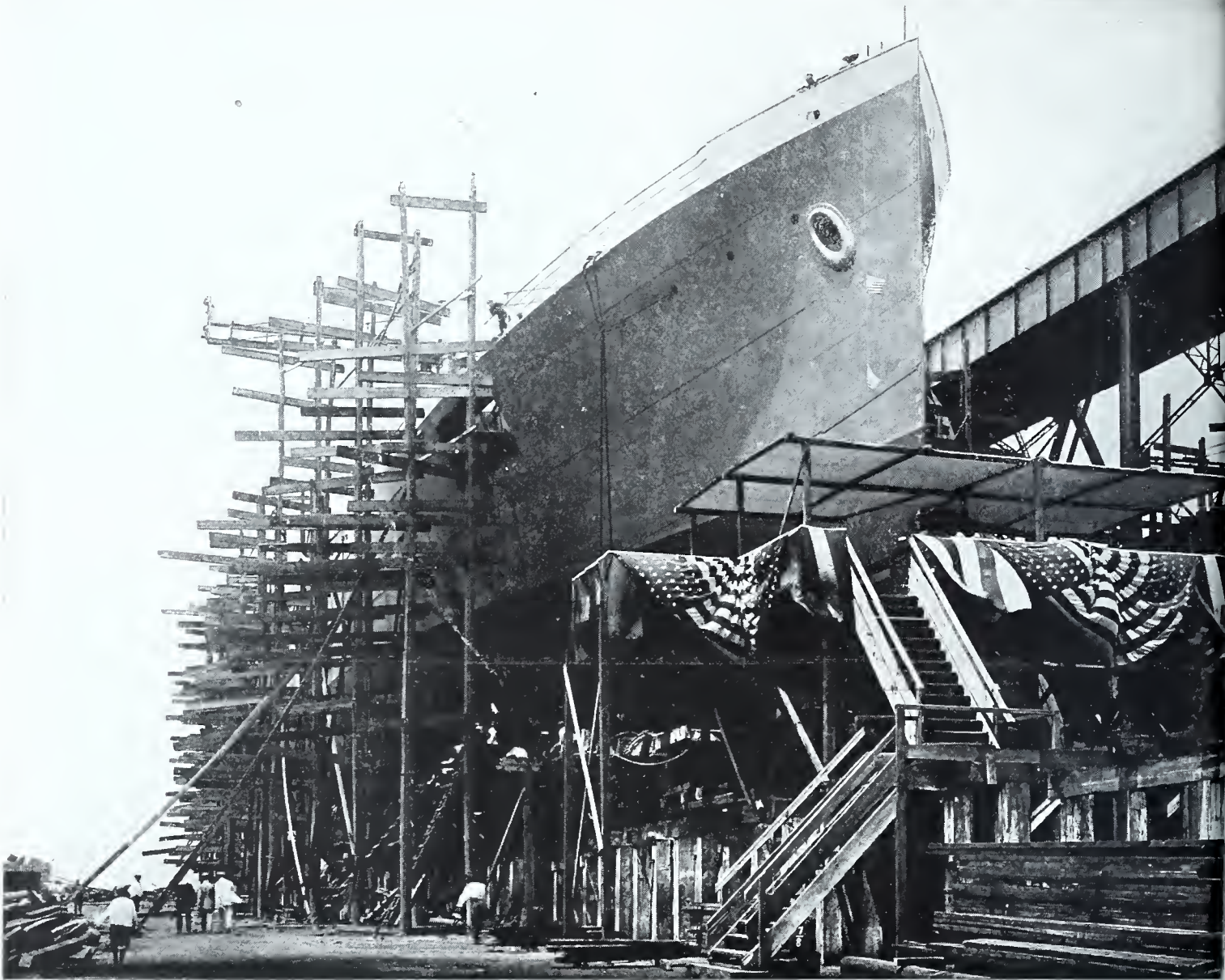
CAULKING SEAMS OF OVERLAPPING DECKPLATES



BOLTING UP BULKHEAD PLATES



THE RIVETER AND THE HOLDER-ON



READY FOR THE CHRISTENING

Laborers

To become specialized into an important activity—other than a skilled trade—is the great, appealing opportunity offered to-day by the shipyards of America to the Laborer. Once in a generation the Laborer has a fortunate chance to raise himself into a real job. That chance has come. The time is now; the place, the shipyard. Under present conditions, no able-bodied man in all America need blame anyone except himself if he does not earn good money, hold a good job, work into a specialty, and feel proud of himself.

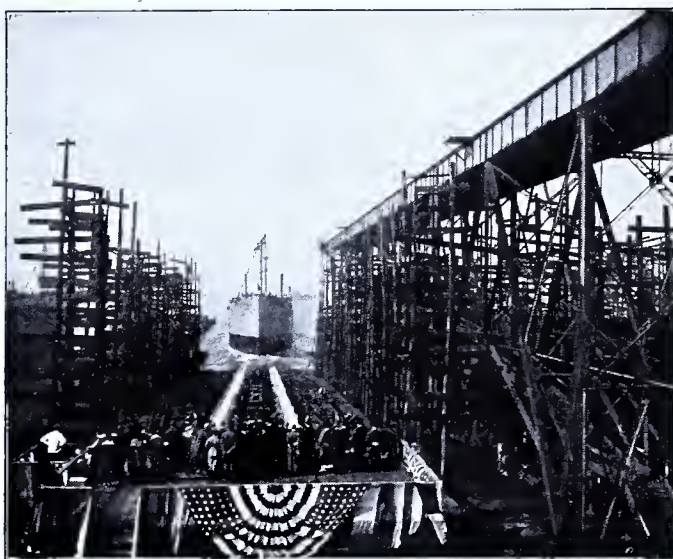
Clerks

How is the Clerk who can't bear arms, going to serve his country? "A man in a shipyard is worth three in the trenches." If this be the case, the Clerk has his opportunity whenever the yards report a shortage of competent clerical help. He who is chosen will not have to feel, now or in after years, that his country went through war without him. Clerks work as Counters, Estimators, Storekeepers, Weighers and Timekeepers. Piece Work Timekeepers are important men and frequently become Rate Setters.

Miscellaneous Trades

In smaller numbers, men of a variety of other trades are needed to round out the working forces which will enable our Flag to span the seas. If the shipyard corps lacks Cementers, Galvanizers, Tile-layers, Upholsterers, it is incomplete. Gantrymen attend the cranes which lift small loads of metal.

Yard Conductors guide the shipyard trains from department to department. Trackmen lay and shift the railroad tracks that interlace the yards. Locomotive Engineers operate yard locomotives and road cranes; Powerhouse Engineers run the stationary engines, pumps and air compressors; both should be licensed and must be men who do not drink.



AFLOAT!

Our Soldiers Must Have Ships!

The Secretary of War stated to the Senate Committee on Military Affairs, January 28, 1918:

“We will have more than one-half million men in France early in 1918, and we have available, *if the transportation facilities are available to us*, 1,500,000 men who in 1918 can be shipped to France.”

Their transportation and support will require at least 6,000,000 tons of new shipping.

The shipyards will need 250,000 new mechanics—men who have not in the past built ships—to produce this tonnage. They will not be needed all at once, but gradually, as called.

Register now, so that you can be notified when needed.

The Shipyard Path of Duty

NOT every man is given the privilege to join our far-flung army overseas in its determined fight for not only the faith and honor and even the existence of the United States, but for the faith and honor and existence of the democracy of the world.

But many men, barred from actual fighting, still may serve, and serve very well indeed.

I refer to the men who are skilled in the use of tools, who can work in wood or in iron or in steel with even a fair degree of facility and who are willing to pin to their endeavors faith and loyalty and perseverance.

These, too, may serve.

And their part, if a little less dramatic, perhaps, than that of the fighting men in the trenches is hardly less important. For the shipyards of America are destined, in no small sense, to become her battlefields.

For upon ships to-day hinges the success of the Great Cause. Without ships, armies—men, guns, motor trucks, aeroplanes, food—cannot cross the ocean and our Cause is lost.

That is where the task of the shipbuilders becomes all-important, becomes glorified with the spirit of service.

So it is that every man who has been given the talent of mechanical ability, may serve. So lies his path of duty. It is an unmistakably plain path. And no man who walks it at this time can stand accused of lacking either faith or patriotism.

EDWARD HUNGERFORD.

ARE YOU READY

TO SERVE YOUR COUNTRY BUILDING SHIPS?

The U. S. Department of Labor and the State
Councils of Defense of the United States

have, in co-operation, undertaken through the medium of the
U. S. EMPLOYMENT SERVICE and U. S. PUBLIC SERVICE
RESERVE, to enroll men for shipbuilding when they are needed.

If you want to stay where you are for the present

and

GO WHEN YOU ARE NEEDED

Enroll Now in the

U. S. SHIPYARD VOLUNTEERS

of the

PUBLIC SERVICE RESERVE

It is registering and examining the capacities of all men who stand ready to go to work building ships when the U. S. Shipping Board asks them to. It will notify you just as soon as you are needed. In the meantime you can go on at your present job.

IF YOU HAVE SKILL IT IS YOUR DUTY TO ENROLL

If there is no Enrollment Agent of the Public Service Reserve in your community see the local representative of the State Council of Defense, or write to the U. S. Public Service Reserve, 1712 Eye Street, Washington, D. C.

DO YOU WANT WORK NOW?

Apply now at an office of the

United States Employment Service

Or any employment office conducted by your State in co-operation with the U. S. Employment Service.

If there is an immediate opening for a man of your skill you will be given full information about the job and how to get there.

Ships the Key to Victory

Men Plying Familiar Trades

BUILD SHIPS

If you can work with tools
THE NATION NEEDS YOU
TO HELP BUILD SHIPS

Issued jointly by U. S. Department of Labor and U. S. Shipping Board